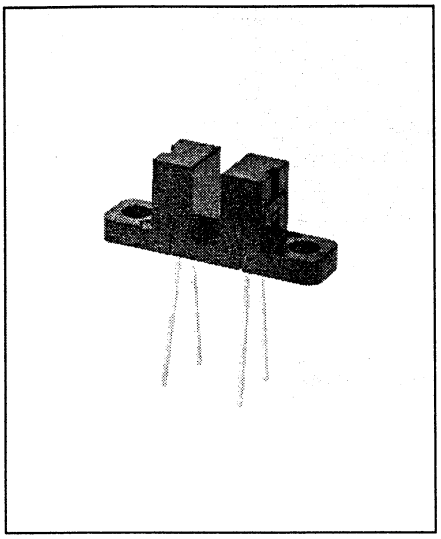
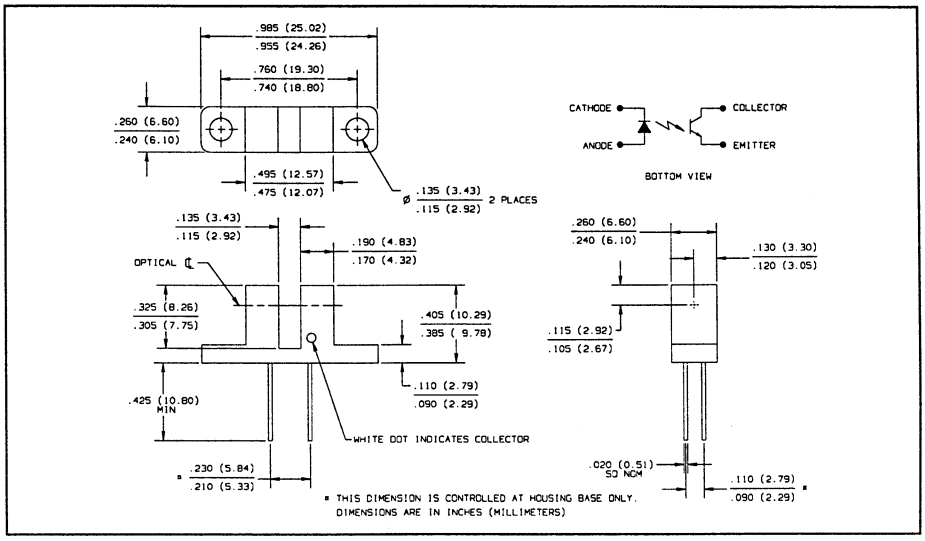
查询OPB828供应商

Product Bulletin OPB828
July 1996

Slotted Optical Switches
Types OPB828A, OPB828B, OPB828C, OPB828D





Features

- Printed circuit board mounting
- 0.125" (3.18 mm) wide slot
- 0.220" (5.59 mm) lead spacing
- Inexpensive plastic housing

Description

The OPB828 series consists of an infrared emitting diode and an NPN silicon phototransistor mounted on opposite sides of a 0.125" (3.18 mm) wide slot. The OPB828A has an IR transmissive housing. The OPB828B has an IR transmissive housing with an 0.010" (0.25 mm) aperture located in front of the phototransistor. The OPB828C has an opaque housing with a molded 0.060" (1.52 mm) aperture located in front of the phototransistor. The OPB828D has an opaque housing with a molded 0.010" (0.25 mm) aperture located in front of the phototransistor. Phototransistor switching takes place whenever an opaque object passes through the slot.

Other configurations available:

OPB827 = 0.300" lead spacing

OPB829 = 24" min. 26 AWG wire leads

Absolute Maximum Ratings (T_A = 25° C unless otherwise noted)

Storage and Operating Temperature Range	-40° C to +85° C
Lead Soldering Temperature [1/16 inch (1.6 mm) from case for 5 sec. with soldering iron]	240° C(2)

Input Diode

Forward DC Current	50 mA
Peak Forward Current (1 µs pulse width, 300 pps)	3.0 A
Reverse DC Voltage	2.0 V
Power Dissipation	100 mW(1)

Output Phototransistor

Collector-Emitter Voltage	30 V
Emitter-Collector Voltage	5.0 V
Collector DC Current	30 mA
Power Dissipation	100 mW(1)

Notes:
(1) Derate Linearly 1.67 mW/° C above 25° C.
(2) RMA flux is recommended. Duration can be extended to 10 sec. max. when flow soldering.
(3) All parameters tested using pulse technique.
(4) Methanol or isopropanol are recommended as cleaning agents. Plastic housing is soluble in chlorinated hydrocarbons and ketones.

Descriptions

Type	Housing	Phototransistor Aperture
OPB828A	IR Transmissive	None
OPB828B	IR Transmissive	0.010"
OPB828C	Opaque	0.060"
OPB828D	Opaque	0.010"

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Types OPB828A, OPB828B, OPB828C, OPB828D

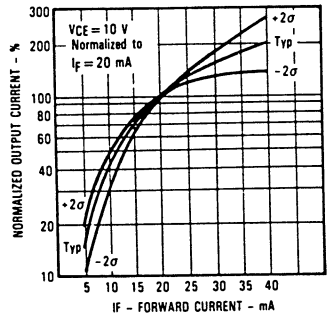
Electrical Characteristics (T_A = 25° C unless otherwise noted)

SYMBOL	PARAMETER	MIN	MAX	UNITS	TEST CONDITIONS
Input Diode					
V_F	Forward Voltage		1.7	V	I_F = 20 mA
I_R	Reverse Current		100	µA	V_R = 2 V
Output Phototransistor					
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	30		V	I_C = 1 mA
$V_{(BR)ECO}$	Emitter-Collector Breakdown Voltage	5.0		V	I_E = 100 µA
I_{CEO}	Collector-Emitter Dark Current		100	nA	V_{CE} = 10 V, I_F = 0, E_e = 0
Coupled					
$V_{CE(SAT)}$	Saturation Voltage		0.6	V	I_C = 1800 µA, I_F = 20 mA
$I_{C(ON)}$	On-State Collector Current	1800		µA	V_{CE} = 0.6 V, I_F = 20 mA

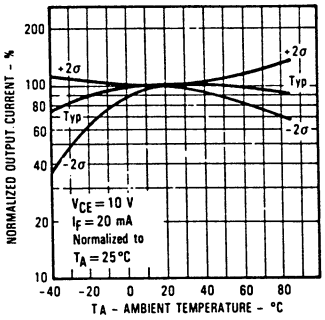
SLOTTED OPTICAL SWITCHES

Typical Performance Curves

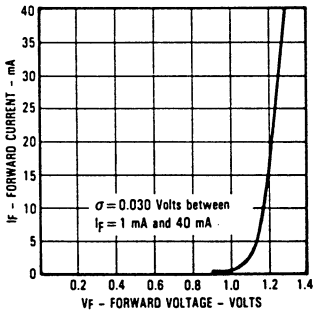
Normalized Output Current vs Forward Current



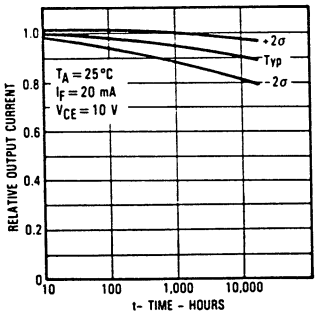
Normalized Output Current vs Ambient Temperature



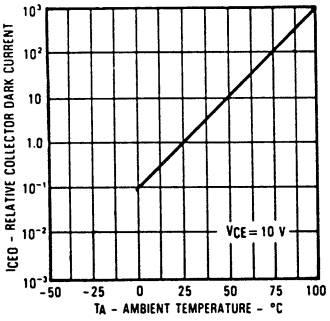
Forward Current vs Forward Voltage Input Diode



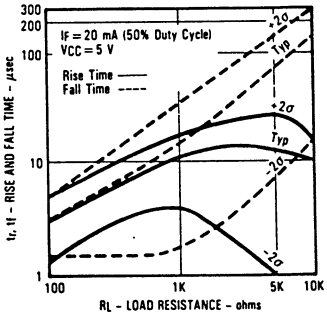
Relative Output Current vs Time



Collector Dark Current vs Ambient Temperature

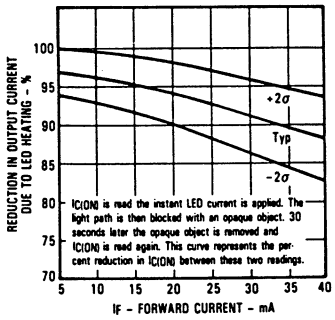


Rise and Fall Time vs Load Resistance

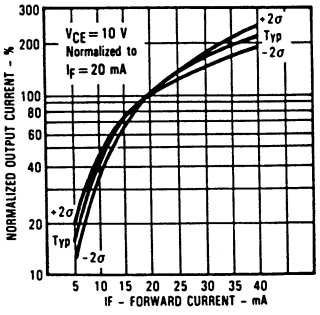


All Part Numbers Ending in "B and "D"

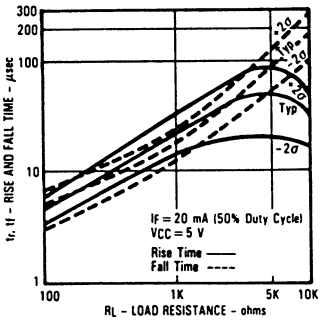
Reduction in Output Current Due to LED Heating vs Forward Current


+2σ
Typ
-2σ
IC(ON) is read the instant LED current is applied. The light path is then blocked with an opaque object. 30 seconds later the opaque object is removed and IC(ON) is read again. This curve represents the percent reduction in IC(ON) between these two readings.
REDUCTION IN OUTPUT CURRENT DUE TO LED HEATING - %
IF - FORWARD CURRENT - mA

Normalized Output Current vs Input Current



Rise and Fall Time vs Load Resistance



Optek reserves the right to make changes at any time in order to improve design and to supply the best product possible.

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